DOCUMENT RESUME

ED 386 060 FL 023 225

AUTHOR Chern, Chiou-lan
TITLE Chinese Readers' Metacognitive Awareness in Reading Chinese and English.
PUB DATE 94
NOTE 22p.; In: Bird, Norman, Ed., And Others. Language and Learning. Papers presented at the Annual International Language in Education Conference (Hong Kong, 1993); see FL 023 205.
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Freshmen; College Seniors; College Students; *Context Clues; *English (Second Language); Foreign Countries; Higher Education; Language Research; Mandarin Chinese; *Metacognition; *Native Speakers; *Reading Processes; *Reading Strategies; Vocabulary; Word Recognition

ABSTRACT

This study tested the hypothesis that more proficient language learners are more aware of the strategies they use in reading. Subjects were 28 native speakers of Mandarin Chinese who learned English as a Second Language (ESL). All were university students; experienced readers were recruited from among fourth-year English majors and inexperienced readers were drawn from first-year students in 11 academic areas. Subjects were first interviewed about their reading habits in Chinese and English. They then read two manipulated passages, one in English and one in Chinese. In each passage, eight function words were removed and replaced with nonsense words, characters, or character combinations. After reading, the subjects were interviewed about how they resolved difficulties in reading the passages. Interview excerpts are presented here with the analysis. It was found that in general, the subjects were less bothered by difficult words in their native language than by those in English. When confronted by unfamiliar words, frustration, nervousness, and low self-esteem were common feelings for inexperienced ESL readers. Inexperienced readers referred to context clues more often in English; experienced readers referred to them in Chinese and to lexical features in English. Results were consistent with previous research. Three appendixes contain metacognitive interview questions and coding taxonomy as well as the post-reading interview coding form. Contains 15 references. (MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 386 060

CHINESE READERS' METACOGNITIVE AWARENESS IN READING CHINESE AND ENGLISH

CHIOU-LAN CHERN

BEST COPY AVAILABLE

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

C. L. Chern

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

FL003225

CHINESE READERS' METACOGNITIVE AWARENESS IN READING CHINESE AND ENGLISH

Chiou-lan Chern

Introduction

Metacognition in reading refers to readers' background knowledge of the text, their awareness of using strategies and of the importance of particular strategies. Three metacognitive processes related to reading have been identified by McNeill (1987): self-knowledge, task-knowledge, and self-monitoring. Self-knowledge refers to learners' own perceptions and feelings about themselves as readers that affect their performance; task knowledge refers to the understanding of when to use what strategies; and self-monitoring refers to the awareness of a comprehension breakdown and the knowledge of what to do about it.

Several recent studies have been designed to see if reading comprehension can be improved by increasing learners' awareness and use of strategies in reading. Studies in first language acquisition have proved that increased metacognitive awareness can lead to better use of reading strategies by children (Paris, Cross and Lipson 1984). Researchers in second language education (Barnett 1988, Devine 1984, Kern 1988, Padron, Knight and Waxman 1986) also pointed out that proficient ESL readers showed more awareness of their use of strategies in reading English than less proficient ESL readers. Carrell (1989) also found relationships between readers' metacognitive awareness of various reading strategies and their reading ability in both first and second languages.

Interviews have been commonly used to tap readers' metacognitive knowledge of their own reading processes. Pre-reading interviews can generate readers' reports of their reading behaviors in general; whereas post-reading interviews elicit retrospection of a specific reading task. This study used both pre-reading and post-reading interviews to test the hypothesis that more proficient language learners are more aware of their strategies used in reading. The design of the study is discussed in the following section.

Research design

Participants

Twenty-eight native speakers of Mandarin Chinese who had learned English as a second language were recruited from a university in Taiwan. Participants in this study represented two ESL reading levels. Experienced ESL readers were recruited from the fourth year university students majoring in English; the Inexperienced ESL readers were recruited from the first year university students studying in 11 different departments.

Materials

Two manipulated passages, one in Chinese and one in English, were used as reading materials. The manipulated English material was a passage of 238 words about birds' instinctive ability to fly. Eight function words were taken out of the original passage and replaced by pseudo words which retained the morphological features of English and met the syntactic requirements in the sentence. The manipulated Chinese passage has 486 characters (298 words). Eight of the original words were replaced by nonsense words. Five of these nonsense Chinese words were compounds composed of two real characters which formed meaningless combinations; the other three nonsense words each contained a pseudo character formed with one semantic and one phonetic component in a left to right symmetry.

Procedure

Before reading the two passages, all participants were interviewed individually in their native language, Mandarin, about their general reading habits in reading Chinese and English. The twelve questions used in the interview were adopted from Goodman, Watson, and Burke (1987) and are included in Appendix A. After reading the passages, each participant was also asked to report retrospectively on what they did while encountering difficulties in reading the two passages. Both the pre-reading and post-reading interview sessions were audiotaped for later transcription and coding.

Coding of Data

Participants' responses to pre-reading interview questions were coded by the author. The coding form (See Appendix B), adapted from that of Bruinsma (1990), was translated into Chinese to facilitate coding. The author first determined where multiple responses to one question occurred. All responses were entered and coded except when a participant initially gave a vague response and later specified a strategy, then the first vague response was disregarded and the more specific one was coded.

A second coder who did not know the participants was asked to code all the interview questions. This second coder, a native speaker of Chinese with an MA degree in TESL, was familiarized with the coding form and used the same distinction for multiple responses. The discrepancies in coding were mutually resolved between the coders.

Participants' responses to post-reading interviews were categorized into five categories (See Appendix C) and coded following the same procedures as identified for pre-reading interviews.

Results of the study

A. Pre-reading Interviews

The results of this interview are reported below. The percentages of each category of response by Experienced and Inexperienced groups to the 11 questions are listed in Table 1.

As seen in Table 1, when asked "What is reading?", three-quarters of the Inexperienced ESL readers indicated that reading was meaning-oriented (i.e. a cognitive act). Experienced ESL readers considered reading as either a meaning making process (41.7%) or a classroom/object-related procedure (41.7%). As to the purpose of reading (Question 2), Experienced readers considered reading as either for functional purposes (91.70%) or for enjoyment (50%). The majority of Inexperienced readers considered reading as mainly functional (81.3%) and their response to reading as enjoyment was lukewarm (12.5%). The responses to Question 3 "What do you think makes a good reader?" were more congruent for the two groups of readers: they both considered procedural aspects of reading (speed/accuracy) and meaning/memory as important qualities for good readers.

When asked to evaluate their own reading proficiency in general, most participants rated themselves as "good" readers but none of them considered themselves as "very good" readers. In response to Question 5, "What would you like to do or could you do that would make you a better reader?", both groups of readers regarded practice as the best means to improve comprehension.

The different reading behaviors in reading an L1, Chinese in this case, and an L2, English, as reported by readers themselves can be seen from answers to questions 6 to 10. When reading in Chinese and encountering a new word (Question 6), both Experienced and Inexperienced ESL readers would usually ask somebody or consult a dictionary. Quite a few readers would ignore the unfamiliar Chinese word (43.8% for Inexperienced and 25% for Experienced ESL readers). About one-quarter of the Experienced and Inexperienced readers used context to guess meaning. None of the Experienced ESL readers would bother marking or writing down the difficult Chinese words.

When encountering a new word in reading English, both groups of readers again would ask somebody or consult a dictionary (100% and 56% for Experienced and Inexperienced readers respectively). The next most frequent behavior for Experienced ESL readers when facing a new English word was to ignore the word (50%). For Inexperienced readers, the second most frequently used strategies were either to ignore the word or to look for contextual clues (31.3% for both). There were no reports of using either linguistic or contextual clues to derive meaning by Experienced ESL readers. Inexperienced readers appeared to try harder to tackle the unknown word either through linguistic cues (25%) or through contextual cues (31.3%).

Table 1

Average frequencies of responses by Experienced and Inexperienced readers in the Metacognitive Interview by category

	Questions	Exp.	Inexp.
1.	What is reading?		
	a. Vague/irrelevant	16.7	0.0
	b. Classroom related	41.7	8.8
	c. Word recognition	8.3	0.0
	d. Physiological activity	8.3	25.0
	e. Cognitive act	41.7	75.0
2.	What do you think reading is for?		
	a. Vague or no answer	0.0	6.3
	b. Intrinsic	25.0	12.5
	c. Linguistic	16.7	12.5
	d. Enjoyment/pleasure/fun	50.0	12.5
	e. Functional	91.7	81.3
3.	What do you think makes a good reader?		
	a. Vague or irrelevant	0.0	0.0
	b. Linguistic	0.0	6.3
	c. Procedural	41.7	56.3
	d. Practice/experience	8.3	6.3
	e. Meaning/memory	100.0	93.8
4.	How good a reader do you think you are?		
	a. Very poor	0.0	6.3
	b. Poor	25.0	31.3
	c. Fair	16.7	6.3
	d. Good	50.0	56.3
	e. Very good	0.0	0.0
5.	What would you like to do or could you do that would make you a better reader?		
	a. Vague or irrelevant	8.3	0.0
	b. Linguistic	0.0	0.0
	c. Procedural	16.7	12.5
	d. Practice	66.7	75.0
	e. Cognitive act	16.7	25.0

6A.	When you are reading in ***Chinese*** and come to a word that you don't know, what do you do?	58.3	50.0
	a. Ask someone/check a dictionary	25.0	43.8
	b. Ignore it	0.0	6.3
	c. Procedural	8.3	12.5
	d. Decoding	25.0	25.0
	e. Use of context		
6B.	When you are reading in ***English*** and come to a word that you don't know, what do you do?		
	a. Ask someone/check a dictionary	100.0	56.3
	b. Ignore it	50.0	31.3
	c. Procedural	16.7	12.5
	d. Decoding	0.0	25.0
	e. Use of context	0.0	31.3
7A.	When reading in ***Chinese*** and come to a word that you recognize but don't know the meaning of, what do you do?		
	a. Ask someone/check a dictionary	58.3	68.8
	b. Ignore it	33.3	25.0
	c. Procedural	0.0	6.3
	d. Decoding	0.0	0.0
	e. Use of context	16.7	18.8
7B.	When reading in ***English*** and come to a word that you recognize but don't know the meaning of, what do you do?		
	a. Ask someone/check a dictionary	100.0	81.3
	b. Ignore it	0.0	12.5
	c. Procedural	8.3	6.3
	d. Decoding	0.0	0.0
	e. Use of context	0.0	31.3
8A.	When reading in ***Chinese***, do you ever read something over again? If so, why. If not, why not?		
	a. Never or vague/irrelevant	16.7	6.3
	b. Yes. (But with no reason given)	0.0	6.3
	c. Yes. To learn more	8.3	6.3
	d. Yes. To enjoy more	16.7	6.3
	e. Yes. To understand better.	58.3	75.0
8B.	When reading in ***English***, do you ever read something over again? If so, why. If not, why not?		
	a. Never or vague/irrelevant	8.3	12.5
	b. Yes. (But with no reason given)	8.3	0.0
	c. Yes. To learn more	8.3	6.3
	d. Yes. To enjoy more	0.0	0.0
	e. Yes. To understand better.	66.7	75.0

9A.	What do you do to help you remember what you read in ***Chinese***?		
	a. Vague or irrelevant	41.7	37.5
	b. Procedural	0.0	6.3
	c. Linguistic/textual	0.0	12.5
	d. Practice	50.0	37.5
	e. Cognition	16.7	6.3
9B.	What do you do to help you remember what you read in ***English***?		
	a. Vague or irrelevant	16.7	37.5
	b. Procedural	25.0	18.8
	c. Linguistic/textual	8.3	0.0
	d. Practice	41.7	43.8
	e. Cognition	16.7	0.0
10A.	When reading in ***Chinese***, what do you do to help yourself get the main idea of the material you read?		
	a. Vague or irrelevant	25.0	18.8
	b. Procedural	8.3	12.5
	c. Linguistic/textual	8.3	0.0
	d. Practice	33.3	31.3
	e. Cognition	33.3	43.8
10B.	When reading in ***English***, what do you do to help yourself get the main idea of the material you read?		
	a. Vague or irrelevant	25.0	18.8
	b. Procedural	0.0	12.5
	c. Linguistic/textual	16.7	12.5
	d. Practice	41.7	31.3
	e. Cognition	33.3	31.3
11.	When you are reading for pleasure, what language do you usually read in? In that language, do you read differently when you are reading for pleasure than when you are reading to study?		
	a. No difference	16.7	6.3
	b. Yes. Word level/use of dictionary	16.7	18.8
	c. Yes. Number of times read	25.0	25.0
	d. Yes. Note-taking	25.0	12.5
	e. Yes. Macro-level: speed, inference	58.3	50.0

Similarly, when encountering a familiar word of which the meaning is unknown in the context (Question 7), most readers either sought help from others or from a dictionary whether they were reading in Chinese (58.3% and 68.8% for Experienced and Inexperienced readers respectively) or in English (100% and 81.3% for Experienced and Inexperienced readers respectively). In addition, none of the readers in this study would decode a familiar Chinese or English word of which the meaning is unknown. Inexperienced ESL readers again reported more willingness to look for contextual cues to tackle unfamiliar English or Chinese words than the Experienced group (18.8% vs. 16.7% in reading Chinese and 31.3% vs. 0.0% in reading English).

In Question 8, the majority of readers in this study reported reading Chinese and English texts over and over for better understanding and none of them would re-read English materials for enjoyment. English, being these readers' second language, did not appear to be a language for pleasure reading.

When asked in Question 9 "What do you do to help you remember what you read in Chinese/English?", most readers in both groups considered practice as very helpful in remembering the content, both in reading Chinese and English materials. In reading Chinese, these readers' native language, quite a few readers (41.7% and 37.5% of Experienced and Inexperienced ESL readers respectively) were not aware of any strategies used to help them remember the content. However, in reading in English, more Experienced than Inexperienced ESL readers were aware of their use of procedural practice (25.0% vs. 18.8%), linguistic or contextual clues (8.3% vs. 0.0%), and cognitive acts (16.7% vs. 0.0%) to help them remember what they read. More Inexperienced than Experienced ESL readers gave vague responses (37.5% vs. 16.7%) to this question.

When asked what they did to help get the main idea of the material read (Question 10), most readers reported practices like re-reading and reciting as well as cognitive acts like thinking and forming an internal outline as helpful. Both groups of readers used more linguistic/textual strategies in reading English than in reading Chinese. Also, more Experienced than Inexperienced ESL readers gave vague responses to this question (25.0% vs. 18.8% for both reading in Chinese and in English).

Question 11 asked what language these readers usually read in when they read for pleasure. Only 3 out of the 12 Experienced ESL readers read occasionally in English for pleasure. For the rest of the participants, Chinese was the language for leisure reading. This result is congruent with the result from Question 8 that none of the participants re-read English materials for enjoyment. When reading for pleasure, most readers reported reading faster (58.3% and 50.0% for Experienced and Inexperienced readers respectively) and making fewer regressions (25% for both groups) than when reading for academic purposes.

B. Post-reading Interviews

When asked during the retrospective interview whether they found any parts of the English or Chinese texts difficult, almost all readers reported encountering too many unfamiliar words.

While reading the Chinese manipulated passage, many Experienced readers considered the pseudo words in this passage as either misprints or expressions used in Hong Kong or mainland China. However, three Experienced ESL readers questioned the veracity of the manipulated Chinese article because of the "strange" words used. One Experienced ESL reader commented on her lack of interest in politics and that therefore was a barrier to understanding the article on economy and the China-France relationship. Another reader reported that she could relate strongly to this article because she was interested in politics and the English article on birds did not appeal to her because she did not know much about birds. These two readers agreed that it was the topic rather than the language that caused reading difficulties. One experienced ESL reader reacted emotionally to the situation stated in the article.

Student A:

> I think it is very ironical to have an ambassador from Laos to work in Taiwan. ...This economy-oriented situation in Taiwan is very... I feel very helpless about this situation.

While reading the manipulated English passage, all Experienced ESL readers commented on reading too many difficult words in one article. They however did not seem to falter at these words. One reader showed his tolerance for uncertainty in the text by giving a broader definition of the problematic parts in the text.

Student B:

> (while trying to find out what "urmlews" meant)
> Here, it says "ones that had been unrestrained" obviously they are raised by their parents. So this (referring to "urmlews") is the raising machine in the laboratory.

This reader also ignored many unfamiliar words and identified the structures that bothered him.

Student B:

> It says "like people," but later on there is no mentioning of people. If its purpose is to compare, then how come we did not see any comparison. So

it's confusing and I think "like people" is not necessary in this sentence.....Here I first read "a young bird tidly returns once....." then I read it again and realized that it was "once it leaves the nest, a young bird tidly returns."

In reading manipulated English text, only one Experienced reader questioned or challenged the text.

Student C:

Isn't eating a natural ability? Why do they need to learn how to eat?

For some Inexperienced ESL readers, there were many "eccentric" words in the Chinese article but nobody reported being irritated by these words. Many of them felt very confident that some of the pseudo Chinese words were either journalistic jargon, simplified characters, or misprints. They also reported that these words were of little importance and could be bypassed without affecting comprehension.

In reading the manipulated English passage, the picture became a little different for Inexperienced readers. Nine out of the 16 Inexperienced ESL readers reported encountering many difficult words in reading the English passage, one regarded the content as difficult, and only one reader explicitly reported having difficulty with pronouncing some English words.

According to these readers, the results of these difficulties were nervousness, low self-esteem, comprehension blackout, frustration and pain. For example, being very confident about the "misprinted" pseudo Chinese characters, one reader in this group appeared to be frustrated at the quantity of unfamiliar words in the English passage.

Student D:

If I had more time I would like to look these words up in the dictionary. Right now the more I read, the more difficult words I found. I just could not go on reading I became very nervous.

Another Inexperienced ESL reader who reported that unfamiliar Chinese words didn't affect comprehension, became very irritated while reading the English passage.

Student E:

"When it's time to strike out on their own..." I became nervous when I read this...I could not organize ideas here and there were so many new words. I felt like an idiot who kept reading without understanding. Because I got

lost in the beginning, I lost my confidence and sense of achievement I would definitely look them up if I were reading at home.

Other readers, however, attributed the difficulties to the lack of content schema besides vocabulary.

Student F:

This string of words (eagles, hawks, refirk...) is a barrier in reading. I read them aloud but still didn't know what they meant. I major in social science and don't know much about natural science, therefore this article is difficult to me.

Five readers in this group reported that they would check all the difficult words in the dictionary if they were reading at home.

The strategies reported by participants were tabulated and are presented in Table 2. Table 2 shows that for Experienced ESL readers, guessing was the strategy most commonly used in reading English and Chinese texts. In reading Chinese, Experienced ESL readers relied more heavily on contextual cues (27%), though word analysis was the next most frequently used strategy (24%).

Table 2

Percentages for use of strategies by the two groups of readers when reading manipulated Chinese and English passages

Group / Passages	Strategies (%)							
	1	2	3	4.1	4.2	4.3	4.4	5
Exp Chinese	18	9	6	9	0	24	27	6
Exp English	13	3	13	7	10	30	23	0
Inexp Chinese	56	6	0	18	0	12	9	0
Inexp English	16	2	3	0	14	27	33	5

However, in reading English, the dependence was more on word analysis (30%) and less on context (23%). The Inexperienced ESL readers seemed to be more tolerant of ambiguity in reading Chinese: 56% of the time they ignored the problematic parts and carried on with their reading. In reading the English passage, they also seemed to rely more on context (33%) than on word analysis (27%).

In summary, participants' retrospective reports showed that most readers were less bothered by difficult words in their native language than in an L2. When confronted with unfamiliar words, frustration, nervousness and low self-esteem appeared to be common feelings for Inexperienced ESL readers. The Inexperienced ESL readers were more tolerant of ambiguity in Chinese with most of the uncertainty in the text ignored. However, in reading English, the same group of readers, the Inexperienced ESL readers, relied on context when faced with difficulties. Experienced ESL readers resorted to context in reading Chinese and relied on lexical features in reading English when encountering difficulties. Besides vocabulary, readers' personal interests in topics also contributed to the ease/difficulty of reading.

The observations made in this study of Chinese readers reading in Chinese and English are consistent with Chen's (1990) study of Chinese readers in America. Both studies found that readers were more confident reading in their native language and rely more on local strategies when reading in English.

Discussion

The different attitudes towards the purposes of reading reflected by Experienced and Inexperienced readers is worth further exploration. Mature readers, fourth year university students, considered reading as both functional and enjoyable, whereas first year university students regarded reading as basically function-oriented, i.e., to gain knowledge and to know the writer's thoughts. The exam-oriented high school instruction and the pressure of the university entrance exam, which most Inexperienced readers had just experienced, may have shaped these readers' concept of reading in general.

Participants' responses to Questions 6 and 7 showed that, unlike the Inexperienced readers who looked for linguistic and contextual clues, Experienced readers didn't seem to expend much effort on difficult words. However, when it came to remembering the content or getting main ideas (Questions 9 and 10) in reading English materials, Experienced readers appeared to venture more guesses and were more aware of their use of strategies. Obviously, meaning-getting played a more important role than sorting difficult words out in Experienced readers' reading process.

Bruinsma (1990) interviewed elementary school students to tap their cognitive awareness in reading, and found that "practice makes perfect" was an axiom of the majority of these students. In other words, these young students believed that good

readers practiced reading more and were experienced in reading, they also believed that to become a good reader, one had to practice more (i.e. read more). The Chinese university students who participated in this study also considered "practice" as an important avenue to becoming a better reader. However, when asked what made a good reader, these students chose meaning-getting and speed/accuracy as the main attributes of a good reader. Practice/experience didn't receive as much weight in this case as in Bruinsma's study.

Decoding (phonic or structural analysis), a common strategy for young participants in Bruinsma's (1990) study, did not appeal to participants in this study either in reading Chinese or English. However, Inexperienced ESL readers did suggest the use of decoding unfamiliar words relatively more frequently than Experienced ESL readers both in reading Chinese and in reading English. This is in line with the results of Winser's (1988) study which found less proficient native English readers to be more reliant on sounding out as a strategy to get at meaning. The adult readers in this study tended to turn to other people or resort to a dictionary when encountering difficult words in reading, be it reading in an L1 or an L2. This result reconfirmed a commonly observed phenomenon that Chinese readers were dictionary-dependent and accuracy-oriented in reading.

Compared with responses to questions 1 to 3, questions 9 and 10, which were on strategies to remember the content or to get the main idea, received more vague or irrelevant responses. This showed readers' lack of metacognitive awareness of their reading behaviors in getting meaning from or remembering the text. This became more obvious when readers reflected on how they read in their native language, Chinese. Probably reading in Chinese has become an internalized process and the end result, comprehension, has been taken for granted therefore no analytical thinking surfaced when asked. Also one traditional concept in Chinese education is that "memorization is the key to comprehension." If this concept has been rooted in these readers' minds in their previous schooling in Chinese, then, to these readers, no strategies are necessary to get at the content of the Chinese materials read.

That Experienced ESL readers showed more awareness of their metacognitive skills is in line with the claim that though all language learners use strategies, the more effective students use them more consciously and more frequently than the less effective learners (Oxford, Crookall, Cohen, Lavine, Nyikos and Sutter 1990). The claim that the ability to effectively use metacognitive skills is a crucial component of skilled reading (Geva and Ryan 1985, Singer and Donlan 1982) has found support in this study.

Pedagogical implications

Though interview results only reflected interviewees' own perspectives of what they did and it is likely that they have guessed what the investigator wanted and responded accordingly, the results of this study have shed light on differences in

L1 and L2 learning. Some teaching implications have emerged from this study. Awareness of using strategies to get at meanings in reading an L2 appeared to distinguish Experienced ESL readers from Inexperienced ESL readers in this study. The finding that inexperienced readers appeared to be more aware of strategies in tackling words than in dealing with global comprehension reveals the need to emphasize the skills for holistic reading.

Increased metacognitive awareness has been proved to lead to better use of reading strategies by children (Paris, Cross and Lipson 1984) as well as by L1 and L2 learners (Carrell 1989). And training has been demonstrated to result in an increase in monitoring reading comprehension in children as well as adults (Grabe and Mann 1984). Therefore, it is advisable to enhance students' awareness of their own reading processes and develop their ability in selecting appropriate strategies through instruction. Also, future instructional emphasis should be placed on providing a more supportive and non-threatening environment to help ESL students develop a better understanding of the reading process.

References

Chen, D. (1990). Effects of formal schema and metacognition on reading comprehension of Chinese and English expository texts by Chinese readers. Unpublished doctoral dissertation, University of Michigan.

Barnett, M.A. (1988). Teaching reading strategies: How methodology affects language course articulation. *Foreign Language Annals*, 21:109-119.

Bruinsma, R. (1990). Learning to ride a bike and learning to read: Children's conception of reading. *Australian Journal of Reading*:13:114-127.

Carrell, P.L. (1989). Metacognitive awareness and second Language reading. *The Modern Language Journal*, 73:121-134.

Devine, J. (1984). ESL reader's internalized models of the reading process. In J. Handscombe, R. Orem, & B. Taylor (eds.), pp. 95-108 *On TESL '83*, Washington, DC: TESOL.

Geva, E. & Ryan, E.B. (1985). Use of conjunctions in expository texts by skilled and less skilled readers. *Journal of Reading Behavior*, 17:331-346.

Goodman, Y.M., Watson, D.J. & Burke, C.L. (1987). *Reading miscue inventory alternative procedures*. New York: Richard C. Owen Publishers.

Grabe, M. & Mann, S. (1984). A technique for the assessment and training of comprehension monitoring skills. *Journal of Reading Behavior*, 16:131-144.

Kern, R.G. (1988). *The role of comprehension strategies in foreign language reading*. Unpublished dissertation, University of California, Berkeley.

McNeill, J.D. (1987). Metacognition in reading comprehension. In *Reading comprehension: New directions for classroom practice* (2nd edit.) pp. 91-105. Glenview, IL: Scott, Foresman and Company.

Oxford, R., Crookall, D., Cohen, A., Lavine, R., Nyikos, M. & Sutter, W. (1990). Strategy training for language learners: Six situational case studies and a training model. *Foreign Language Annals*, 22:197-216.

Padrón, Y., Knight, S.L., & Waxman, H.C. (1986). Analyzing bilingual and monolingual students' perceptions of their reading strategies. *The Reading Teacher*, 39:430-433.

Paris, S.G., Cross, D.R. & Lipson, M.Y. (1984). Informed strategies for learning: A program to improve children's reading awareness and comprehension. *Journal of Educational Psychology*, 76:1239-1252.

Singer, H. & Donlan, D. (1982). Active comprehension: Problem-solving schema with question generation for comprehension of complex short stories. *Reading Research Quarterly*, 17:166-186.

Winser, B. (1988). Readers getting control of reading. *Australian Journal of Reading*, 11:257-268.

Appendix A:

Metacognitive Interview Questions

1. What is reading?
2. What do you think reading is for?
3. What do you think makes a person a good reader?
4. How good a reader do you think you are?

   Very poor__ Poor___ Fair___ Good___ Very good____
5. What would you like to do or could you do that would make you a better reader?
6. (a) When you are reading in Chinese and you come to a word that you don't know, what do you do?

(b) When you are reading in English and come to a word you don't know, what do you do?

7. (a) When you are reading in Chinese and come to a word you recognize but don't know the meaning of, what do you do?

   (b) When you are reading in English and come to a word you recognize but don't know the meaning of, what do you do?

8. (a) Do you ever read something over again in Chinese? Why or why not?

   (b) Do you ever read something over again in English? Why or why not?

9. (a) What do you do to help you remember what you read in Chinese?

   (b) What do you do to help you remember what you read in English?

10. (a) What do you do to help yourself get the main idea of the reading material when you are reading in Chinese?

    (b) What do you do to help yourself get the main idea of the reading material when you are reading in English?

11. When you are reading for pleasure, do you usually read in Chinese or in English?

12. When you are reading for pleasure, do you read differently than when you are reading to study? (If yes) What do you do differently when reading for pleasure?

Appendix B:

Metacognitive Interview Coding Taxonomy

1. What is reading?

   Categories:

   a. Vague or irrelevant
      e.g. Reading is "just read," and "when you read." "I don't know."

   b. Classroom/object related procedure
      e.g. "Reading a book/a word/a story." "Reading is reading something made of words."

   c. Word recognition (decoding)

e.g. "Sounding out letters/words." "Looking at words and saying them." "Reading is learning new words."

d. Physiological activity
e.g. "Reading is an exercise of eyes/brain."

e. Cognitive act (meaning)
e.g. "Reading is when you understand and learn knowledge." "Reading is to remember the content."

2. What do you think reading is for?

Categories:

a. Vague or no answer
e.g. "I don't know."

b. Intrinsic
e.g. "To become good at reading." "To become a better person." "To stimulate thinking." "To become smarter."

c. Linguistic
e.g. "To learn more words." "To learn better expressions." "To improve language skills."

d. Enjoyment/pleasure/fun
e.g. "Reading is for fun/for recreation." "I like it." "I read when I am bored."

e. Functional
e.g. "To know things." "To gather data." "To learn new information." "To understand the writer's thoughts."

3. What do you think makes a good reader?

Categories:

a. Vague or irrelevant

b. Linguistic
"A good reader knows a lot of words/expressions." "A good reader usually writes better."

c. Procedural
e.g. "A good reader reads fast/makes no mistakes."

d. Practice/experience
e.g. "A good reader is one who reads every day (a lot)/one who is old."

e. Meaning/memory
e.g. "A good reader really knows what's going on when talking about the story." "A good reader has good comprehension/reads critically/can catch main idea."

4. How good a reader do you think you are?

Categories:

a. Very poor
b. Poor
c. Fair
d. Good
e. Very good

5. What would you like to do or could you do that would make you a better reader?

Categories:

a. Vague or irrelevant

b. Linguistic
e.g. "Increase vocabulary."

c. Procedural
e.g. "Read slower/faster." "Read with good expression."

d. Practice
e.g. "Read more books." "Learn from others." "More training."

e. Cognitive act
e.g. "Think more in my head as I read." "Concentrate more." "Meditate before I read.

6. When you are reading in Chinese/English and come to a word that you don't know, what do you do?

Categories:

a. "Ask someone." / "Check a dictionary."

b. Ignore it
e.g. "Skip it." "Read on."

c. Procedural
e.g. "Underline/mark/write down the word."

d. Decoding (phonic/structural analysis)
e.g. "Try to pronounce the word." "Find out its part of speech/function in the sentence."

e. Use of context (cognitive strategies)
e.g. "Go to the previous/following sentences and look for clues." "Skip it for now and wait for further clues." "Guess the meaning."

7. When you are reading in Chinese/English and come to a word that you recognize but don't know the meaning of, what do you do?

Categories:

a. "Ask someone." / "Check a dictionary."

b. Ignore it
e.g. "Skip it." "Read on."

c. Procedural
"Underline/mark/write down the word." "Read more times."

d. Decoding (phonics and/or structural analysis)
e.g. "Try to pronounce the word." "Find out its part of speech/function in the sentence."

e. Use of context (cognitive strategies)
e.g. "Go to the previous/following sentences and look for clues." "Skip it for now and wait for further clues." "Guess the meaning."

8. When reading in Chinese/English, do you ever read something over again? Why or why not?

Categories:

a. Never or vague or irrelevant

b. Yes. (But with no reason given.)

c. Yes. To learn words/expressions/structures.

d. Yes. To enjoy more.

e. Yes. To understand better.

9. What do you do to help you remember what you read in Chinese/English?

Categories:

a. Vague or irrelevant
e.g. "Nothing special."

b. Procedural
e.g. "I translate it."

c. Linguistic/textual
e.g. Apply a particular skill like phonics, slow reading (word by word or sentence by sentence). Read with contextual aids (pictures, titles etc), or read key words.

d. Practice
e.g. "Re-reading/reciting/trying to memorize it." "Make a note/write an outline/paraphrase it in the margin.

e. Cognition
e.g. "Think about what I had just read." "Form an outline in my mind." "Focus on topic sentence." "Think of related material."

10. When reading in Chinese/English, what do you do to help yourself get the main idea of the material you read?

Categories:

a. Vague or irrelevant
e.g. "Nothing special."

b. Procedural
"Translate it." "Read others' critiques or comments."

c. Linguistic/textual
e.g. Apply a particular skill like phonics, slow reading, read with contextual aids.

d. Practice
e.g. "Re-reading/reciting/trying to memorize it." "Make a note/write an outline/paraphrase it in the margin."

e. Cognition
e.g. "Think about what I had just read." "Form an outline in my mind." "Focus on topic sentence." "Think of related material."

11. When you are reading for pleasure, what language do you usually read in? In that language, do you read differently when you are reading for pleasure than when you are reading to study?

Categories:

a. No difference

b. Yes. Word level/use of dictionary

c. Yes. Different number of times read

d. Yes. Note-taking

e. Yes. Macro-level: speed, inference

Appendix C:

Post-Reading Interview Coding Form

1. Read on/skip/ignore
Responses like "I just keep reading," or "This is not important so I just skip it," were coded in this category.

2. Inference
Responses like "I try to think of related subject matter" were coded in this category.

3. Re-read
This was coded when readers reported "I read it again."

4. Guess (assign a temporary meaning)
This is a general category (4.1) used to code reports like "I just guess." Where readers used the word "guess" but with specific guessing strategies, these were coded in the following way: (4.2) guess from neighboring words, (4.3) guess from prefixes, suffixes and parts of speech, and (4.4) guess from context.

5. Mark the text
Responses like "I mark the words I don't know" and "I underline the whole parts that are unclear to me" belonged to this category.